

4.2.2.10 Waste Management

This section summarizes the impacts on waste management at NTS under No Action and for each of the long-term storage alternatives. There is no spent nuclear fuel or HLW associated with Pu or HEU storage. Table 4.2.2.10–1 lists the projected sitewide waste generation rates and treatment, storage, and disposal capacities under No Action for 2005. Projections for No Action were derived from the most recent applicable environmental data, with the appropriate adjustments made for those changing operational requirements where the volumes of wastes generated are identifiable. The projections do not include waste from future, yet uncharacterized, environmental restoration activities. The projections for No Action could change significantly depending on the decisions resulting from the Waste Management PEIS or the NTS Site-Wide EIS. Table 4.2.2.10–2 provides the estimated incremental operational waste volumes projected to be generated at NTS as a result of the various storage alternatives prior to treatment. Some of the waste values described in this section are different than the waste values in the table. For those values that differ (for example LLW), the table gives waste generated pre-treatment values and the text discusses post-treatment values (indicated as after treatment and volume reduction). The waste volumes generated from the various storage alternatives that were added to the No Action projection and the resultant waste effluent used for the waste impact analysis are shown in Section E.3.1. Facilities that would support the storage of Pu and/or HEU would treat and package all generated waste into forms that would enable staging and/or disposal in accordance with RCRA and other applicable statutes as outlined in Section E.1.2. Depending in part on decisions in waste-type-specific RODs for the Waste Management PEIS and in subsequent RODs and NEPA documents, wastes could be treated and disposed of onsite or at regionalized or centralized DOE sites. For purposes of analyses only, this PEIS assumes that TRU and mixed TRU waste would be treated onsite to the current planning-basis WIPP WAC, and shipped to WIPP for disposal. This PEIS also assumes that LLW, mixed LLW, hazardous, and nonhazardous wastes would be treated and disposed of in accordance with current site practice.

Preferred Alternative: No Action Alternative

Under this alternative, TRU, low-level, mixed, hazardous, and nonhazardous wastes would continue to be managed from the missions outlined in Section 3.3. The disposal of waste received from offsite would not involve treatment at NTS, since this waste must be treated, packaged, and certified to NTS WAC before being shipped to NTS for disposal. NTS has retrievable storage of TRU waste awaiting shipment to a Federal repository. Although there would be no generation of TRU waste onsite, mixed TRU waste from LLNL would continue to be stored at NTS. Solid mixed LLW would be stored and treated in accordance with the NTS Site Treatment Plan. Hazardous waste would be accumulated, then shipped offsite for treatment and disposal at commercial RCRA-permitted facilities. Nonhazardous and sanitary wastes would be treated and disposed of locally in facilities located within the separate activity areas onsite.

Consolidation Alternative

Modify Existing Tunnel Drifts and Construct New Material Handling Building at the P-Tunnel

Construction and operation of a consolidated Pu storage facility using P-Tunnel would have an impact on existing NTS waste management activities, increasing the generation of TRU, low-level, mixed, hazardous, and nonhazardous wastes. Waste generated during construction would consist of wastewater and solid nonhazardous and hazardous wastes. The nonhazardous waste would be disposed of as part of the construction project by the contractor, and the hazardous waste would be shipped to commercial RCRA-permitted treatment and disposal facilities. No soil contaminated with hazardous material or radioactive constituents is expected to be generated during construction. However, if any was generated it would be managed in accordance with site practice and all applicable Federal and State regulations.

After treatment and volume reduction, approximately 5 m³ (7 yd³) of TRU waste and 4 m³ (5 yd³) of mixed TRU waste from leaded gloves, windows, and contaminated lead shielding would be treated and packaged to

meet the current planning-basis WIPP WAC or alternative treatment level. While awaiting shipment to WIPP (depending on decisions made in the ROD associated with the supplemental EIS for the proposed continued phased development of WIPP for disposal of TRU waste), the TRU and mixed TRU waste would be stored at the TRU Pad Waste Storage in Area 5. One additional truck shipment per year would be required to transport these wastes to WIPP.

Following treatment and volume reduction, approximately 630 m³ (824 yd³) of LLW from solidified liquid LLW (such as decontamination solutions), protective clothing, HEPA filters, glovebox gloves, and decontamination equipment and materials would require disposal in the Area 5 or Area 3 RWMS. Assuming a land usage of 6,000 m³/ha (3,200 yd³/acre), this would require approximately 0.1 ha/year (0.3 acres/year) of LLW disposal area. The 0.2 m³ (50 gal) of liquid and 65 m³ (85 yd³) of solid mixed LLW would be treated and disposed of in accordance with the NTS Site Treatment Plan through the use of existing and planned facilities. The 2 m³ (476 gal) of liquid and 2 m³ (3 yd³) of solid hazardous wastes would have a minimal impact on waste management activities at NTS. Existing facilities at the Area 5 Hazardous Waste Storage Unit are adequate to stage the increase in hazardous waste while awaiting shipment to an offsite commercial RCRA-permitted treatment and disposal facility. New sanitary lagoons would be required to treat the 135,000 m³ (35,600,000 gal) of nonhazardous liquid wastes. After volume reduction, 810 m³ (1,060 yd³) of solid nonhazardous waste would require disposal at one of the onsite landfills.

Construct New Plutonium Storage Facility

Construction and operation of a consolidated Pu storage facility would have an impact on existing waste management activities identical to that described above for the P-Tunnel facility, with the following exceptions. Construction of sanitary, utility, and process wastewater treatment systems would be required to treat approximately 114,000 m³ (30,100,000 gal) of liquid nonhazardous waste. After volume reduction, 750 m³ (981 yd³) of solid nonhazardous waste would require disposal at one of the onsite facilities.

Collocation Alternative

Modify Existing Tunnel Drifts and Construct New Material Handling Building at the P-Tunnel

Construction and operation of a consolidated Pu storage facility collocated with HEU storage using the P-Tunnel would have an impact on existing NTS waste management activities, increasing the generation of TRU, low-level, mixed, hazardous, and nonhazardous wastes. Waste generated during construction would consist of wastewater and solid nonhazardous and hazardous wastes. The nonhazardous waste would be disposed of as part of the construction project by the contractor, and the hazardous waste would be shipped to commercial RCRA-permitted treatment and disposal facilities. No soil contaminated with hazardous material or radioactive constituents is expected to be generated during construction. However, if any was generated it would be managed in accordance with site practice and all applicable Federal and State regulations.

Since there is no TRU or mixed TRU wastes associated with HEU storage, the impacts from TRU and mixed TRU wastes are identical to those identified in the consolidated Pu storage alternative. The sources of waste are similar to those of the consolidated Pu storage facility, except the source of radioactive contamination from the HEU storage is uranium.

Following treatment and volume reduction, approximately 630 m³ (824 yd³) of LLW contaminated with Pu and 20 m³ (26 yd³) contaminated with uranium would require disposal in the Area 5 or Area 3 RWMS. Assuming a land usage of 6,000 m³/ha (3,200 yd³/acre), this would require approximately 0.1 ha/yr (0.3 acre/yr) of LLW disposal area. The 0.2 m³ (55 gal) of liquid mixed LLW and 66 m³ (86 yd³) of solid mixed LLW would be treated and disposed of in accordance with the NTS Site Treatment Plan through the use of existing and planned facilities. The 2 m³ (528 gal) of liquid and 2 m³ (3 yd³) of solid hazardous wastes would have a minimal impact on waste management activities at NTS. Existing facilities at the Area 5 Hazardous Waste Accumulation Site

are adequate to stage the increase in hazardous waste while awaiting shipment to an offsite commercial RCRA-permitted treatment and disposal facility. New sanitary lagoons would be required to treat the 189,000 m³ (49,900,000 gal) of liquid nonhazardous waste. After volume reduction, 980 m³ (1,280 yd³) of solid nonhazardous waste would require disposal at one of the onsite landfills.

Construct New Plutonium and Highly Enriched Uranium Storage Facilities

Construction and operation of a consolidated Pu storage facility collocated with HEU storage would have an impact on existing NTS waste management activities identical to that described above for the modified P-Tunnel facility, with the following exceptions. Construction of sanitary, utility, and process wastewater treatment systems would be required to treat approximately 153,000 m³ (40,500,000 gal) of nonhazardous waste. After volume reduction, 950 m³ (1,240 yd³) of solid nonhazardous waste would require disposal at one of the onsite landfills.

Subalternative Not Including Strategic Reserve and Weapons Research and Development Materials

The exclusion of strategic reserve or weapons R&D materials would reduce the amount of operational waste volumes shown in Table 4.2.2.10–2 for the Consolidation Alternative and the Collocation Alternative. The decrease would be proportional to the amount of material excluded. [Text deleted.]